XG2330 E1/Datacom Transmission Analyzer

Datasheet

Flexible combination and comprehensive analysis, XG2330 is a powerful advanced handheld instrument, providing a scalable, future-proof solution for testing 2Mb/s and N×64kb/s digital circuits. Through the easy-to-download testing options, XG2330 offers full-featured measurements of error, alarm, signaling, tone and timeslot data, and helps to verify quality-of-service in your networks. It can be widely used in the R&D, production, installation, verification and maintenance of SDH, PDH, PCM, DTU and Data protocol converter equipments.

Basic Functions

E1 Testing

- 120Ω balance and 75Ω unbalance line interfaces
- HDB3 and AMI line codes
- Out-of-service framed and unframed testing
  - ✓ 2Mb/s, N×64Kb/s BER testing
  - ✓ Frame data and alarm monitoring
  - ✓ Clock slip measurement
- In-service framed and unframed testing
  - ✓ Hi-Z and through mode testing
  - ✓ CODE, FAS, CRC4, E-BIT BER testing
  - ✓ Frame data and timeslot activity monitoring
  - ✓ Monitoring of octet code in any selected timeslot
  - ✓ Built-in 64kb/s tone channel monitoring capability
  - ✓ ABCD code monitoring in CAS signaling
  - ✓ TS16 monitoring in CCS signaling
- Double E1 channel testing
  - ✓ Double E1 channels Rx Hi-Z and through mode testing
  - ✓ Double E1 channels Code, FAS, CRC-4, E-BIT BER testing
  - ✓ Double E1 channels FAS/NFAS, CAS Multiframe, CCS timeslot 16 and timeslot activity monitoring
  - ✓ Double E1 channels timeslot data monitoring
  - ✓ Double E1 channels built-in 64kb/s tone channel monitoring capability
  - ✓ Double E1 channels CAS and CCS signaling monitoring
- Round trip delay measurement
- APS delay measurement
- Pulse Mask Measurement
  - ✓ Input E1 pulse shape display
  - ✓ Pulse width measurement
  - ✓ Pulse width and amplitude ratio measurement
  - ✓ Up-edge and down-edge time measurement
  - ✓ Overshoot and undershoot ratio measurement
  - ✓ Pulse amplitude and level measurement
- PCM simulator
  - ✓ Extensive error insertion and alarm generation
  - ✓ Frame data control and monitoring
  - ✓ Idle word insertion in one or more timeslots with programmable pattern
  - ✓ VF tone generation and measurement in one or more timeslots
  - ✓ Listen to any voice channel in the receiver via earphone
  - ✓ Talk to any voice channel in the transmitter via microphone
  - ✓ Can perform the tests of signal level and

frequency of the VF channel simultaneously

- ✓ CAS and CCS signaling generation and monitoring

- Frequency and Offset measurements
- Level measurement
- Transmit clock deviation up to ±999ppm
- Clock source: Internal, Interface and External 2M clock/signal
- Testing pattern: PRBS, Fixed Code, 16-BIT User-programmable word
- Error insertion: Single and Fixed Rate
- Real-time transmit circuit status indication: open/short
- Manual or auto-timer measurements
- Performance analysis according to G.821, G.826, and M.2100

Network Testing

- IP PING
- Trace Route
- IP Config.

Other Functions

- Auto-configuration:
  - ✓ E1 frame format, BERT pattern, the timeslots carried BERT pattern automatic detection and setting for E1 testing
  - ✓ BERT pattern and Tx data rate automatic detection and setting for Datacom testing
  - ✓ BERT pattern and octet timing automatic detection and setting for G.703 64kb/s CO testing
- Real-time clock
- BERT pattern: PRBS, Fixed Code, 16-BIT User-programmable word and QBF
- Error insertion: Single and Fixed Rate
- Reset the results to zero and auto configure
- Manual, Auto and Timer measurements
- Self-check, Keyboard and LED testing
- Performance analysis according to ITU-T G.821, G.826 and M.2100
- Histogram analysis of error and alarm events
- Upgradeable embedded software

Option

- Option 1: Jitter Testing
  - ✓ Peak-to-peak jitter measurement
  - ✓ Jitter measurement comply with O.172 filter
  - ✓ Hit seconds and hit free seconds counts
- Option 2: Datacom Testing
  - ✓ Datacom (V.24, V.35, V.36, X.21, RS-449, RS-485, EIA-530 and EIA-530A) BER testing
  - ✓ Asynchronous BER testing with baud rate 50b/s～57.6b/s
  - ✓ Synchronous BER testing with data rate 1.2kb/s～2048kb/s
  - ✓ DTE or DCE equipment emulation
  - ✓ Synchronous clock source selectable
  - ✓ Frequency measurement
  - ✓ Handshaking signals control and monitoring
- Option 3: G.703 64kb/s CO Testing
  - ✓ G.703 64kb/s Codirectional BER testing
  - ✓ Octet timing control and monitoring
  - ✓ Frequency and offset measurement
  - ✓ Transmit clock source: Internal and Interface
- Option 4: Mux & Demux Testing
  - ✓ E1-Datacom synchronous 64kb/s, N×64kb/s BER testing
  - ✓ E1-G.703 CO synchronous 64kb/s BER testing
  - ✓ Frequency and Offset measurement of Rx interface
  - ✓ Handshaking signals monitoring of Datacom interface
  - ✓ E1 framed data and alarm monitoring
- Option 5: Drop & Insert Testing
  - ✓ “Insert” mode: Insert synchronous 64k, Nx64kb/s data from Datacom or G.703 CO interface to one or more timeslots of E1 signal
  - ✓ “Drop” mode: Drop one or more timeslots

data from E1 signal to Datacom or G.703 CO interface

- ✓ "Insert + Drop" mode: Insert and drop one or more E1 timeslots data from or to Datacom or G.703 CO interface

Main Features

- Handheld design, easy-to-use
- Full-featured measurements to E1, Datacom and unique IP PING testing
- High resolution large color touchscreen
- Smart navigation mode display
- Extensive error and alarm generation, detection and indication
- Up to 99 days' continuous test performance
- Save/Recall upto 100 user-defined configurations and 100 groups of results
- Powered by built-in Li-ion rechargeable battery or AC power supply
- Test results uploaded, conserved and printed by TestManagerPro software via USB or LAN Cable connected to PC

Configurations

E1/Datacom Transmission Analyzer	1set
E1 75Ω Unbalance Test Cable	2pcs
E1 120Ω Balance Test Cable	1pcs
Double E1 Balance Test Cable	1pcs
75Ω Loop-back Connector	1pcs
Master-slave USB Cable	1pcs
Stylus	1pcs
Ear-phone	1pcs
Charger	1pcs
Li-ion Rechargeable Battery (Built-in)	1pcs
TestManagerPro Setup CD	1pcs
User's Manual	1pcs
Waterproof Package	1pcs
Quality Certificate Card	1pcs
Maintenance Card	1pcs
Packing List	1pcs

Option Cable

Datacom Adapter Cables	4pcs
Datacom Interface Loop-back Connector	1pcs
G.703 CO Test Cable	1pcs

Specifications

E1 Testing

Internal Clock

2048Kb/s ± 10ppm

Frequency Deviation

±999ppm

Line Interfaces

75Ω Unbalance

120Ω Balance

High Input Impedance>2KΩ

Line Code

HDB3, AMI

Frame Type

Unframed, PCM30, PCM30CRC, PCM31, PCM31CRC

Receiving Sensitivity

> -43dB

Tx Clock Source

Internal, Interface and External 2MHz clock or HDB3 signal

Pulse Mask Measurement

Comply with G.703

Jitter Measurement

Comply with G.823, O.172

Frequency Measurement

Accuracy: ±1Hz

Offset Measurement

Accuracy：±1ppm

Range：-999ppm～+999ppm

VF Insertion

Frequency: 200Hz ～ 3400Hz, Step: 10Hz

Level: -60dBm ～ +3dBm

Microphone mode

VF Measurement

Frequency: 200Hz ～ 3400Hz,

Accuracy: ±1Hz

Level range: -60.00dBm ～ +3.14dBm

Delay Measurement

Accuracy: ±1μs

G.703 64kb/s CO Testing

Line Rate

64kb/s ± 100ppm

Line Interface

120Ω Balance

Line Code

AMI

Datacom Testing

Line Interfaces

V.24, V.35, V.36, X.21, RS-449, RS-485, EIA-530, EIA-530A

Data Rate

ASYNC: 50, 75, 150, 300, 600bit/s, 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4, 57.6kb/s

SYNC: 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4kb/s, N×64kb/s (N=1～32)

Test Patterns

PRBS: 2^{23}-1, 2^{20}-1, 2^{15}-1, 2^{11}-1, 2^{9}-1, 2^{6}-1

Fixed Code: 1111, 0000, 1010

16-BIT: User Programmable Word

PRBS Polarity: Normal or Inverted

QBF: QBF1, QBF2, QBF3, QBF4

Others

LED Alarm Indications

SIG LOSS, ALARM, PAT LOS, ERROR, HISTORY

Error Insertion

Type: BIT, FAS, CODE, CRC4, E-BIT

Single, OFF, Fixed Rate: 10^{-2}, 10^{-3}, 10^{-4}, 10^{-5}, 10^{-6}, 10^{-7}

Performance Analysis

ITU-T G.821, G.826 and M.2100

Communication Port

USB port or RJ45 port

Display

4.3 inch large size display with color touchscreen

Rechargeable Battery

Li-ion battery, continuous working for 4 hours

Recharge Time

Approx. 2 hours

Power Supply

Charger:

Input: 100V ~ 240VAC, 50/60Hz

Output: 12VDC /1.5A

Battery:

Li-ion battery

TestManagerPro Software

Operating System: WIN98/ME/2000/NT/XP

Operating Temperature

0℃～50℃

Storage Temperature

-30~+70℃

Humidity

5%~95% non-condensing

Dimensions

233mm×110mm×64mm（L×W×H）

Weight

Approx. 750g

Ordering Information

XG2330	E1/Datacom Transmission Analyzer (w/o option)
Option 1	Jitter Testing
Option 2	Datacom Testing
Option 3	G.703 64kb/s CO Testing
Option 4	Mux & Demux Testing
Option 5	Drop & Insert Testing

For more information or a directory from sales offices, please send inquiry to mail address:sales@xgxc.com

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